

**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED  
UNINTENTIONALLY UNDER 37 CFR 1.137(b)**

Docket Number (Optional)  
034942-000258

First named inventor: Booth, Richard

Application No.: 10/037,870

Art Unit: 2681

Filed: 10/22/01

Examiner: Not Yet Assigned

Title: Reduction Of Average-To-Minimum Power Ratio In Communications Signals

Attention: Office of Petitions

**Mail Stop Petition**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

FAX: (703) 308-6916

**RECEIVED**

**JAN 30 2004**

**OFFICE OF PETITIONS**

NOTE: If information or assistance is needed in completing this form, please contact  
Petitions Information at (703) 305-9282.

The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the Office notice or action plus any extensions of time actually obtained.

**APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION**

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee -- required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

**1. Petition fee**

☒ Small entity - fee \$665.00 (37 CFR 1.17(m)). Applicant claims small entity status. See 37 CFR 1.27.

☐ Other than small entity - fee \$ \_\_\_\_\_ (37 CFR 1.17(m))

**2. Reply and/or fee**

A. The reply and/or fee to the above-noted Office action in  
the form of Notice to File Corrected Application Papers (identify type of reply):

☒ has been filed previously on 7/10/02.

☒ is enclosed herewith.

B. The issue fee of \$ \_\_\_\_\_

☐ has been paid previously on \_\_\_\_\_.

☐ is enclosed herewith.

[Page 1 of 2]

This collection of information is required by 37 CFR 1.137. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

01/26/2004 CNGUYEN 00000131 10037870

01 FC:2453

665.00 OP

## 3. Terminal disclaimer with disclaimer fee

- ☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.
- ☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$\_\_\_\_\_ for a small entity or \$\_\_\_\_\_ for other than a small entity) disclaiming a period equivalent to the period of abandonment is enclosed herewith (see PTO/SB/63).

## 4. Statement. The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional. [NOTE: The United States Patent and Trademark Office may require additional information if there is a question as to whether either the abandonment or the delay in filing a petition under 37 CFR 1.137(b) was unintentional (MPEP 711.03(c), subsections (III)(C) and (D))].

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

January 21, 2004

Date

Signature

Adrienne yeung

Typed or printed name

THELEN REID &amp; PRIEST, LLP

Address

P.O. Box 640640

San Jose, CA 95164-0640

Address

Enclosures: ☒ Fee Payment☒ Copy of Reply dated 7/10/02☐ Terminal Disclaimer Form☐ Additional sheets containing statements establishing unintentional delay☒ Other : Postcard, 47 Formal Drawings (22 pages), Copy of Notice of Abandonment dated 12/12/03

## CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(A)]

I hereby certify that this correspondence is being:

☒ deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☐ transmitted by facsimile on the date shown below to the Patent and Trademark Office at (703) 308-6916.

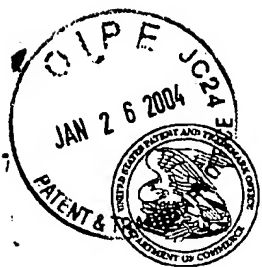
January 23, 2004

Date

Signature

Ruth Rodriguez

Typed or printed name of person signing certificate



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/037,870	10/22/2001	Richard W. D. Booth	034942-258

CONFIRMATION NO. 4801

ABANDONMENT/TERMINATION  
LETTER

\*OC000000011479839\*

Robert E. Krebs  
 Thelen Reid & Priest LLP  
 P.O. Box 640640  
 San Jose, CA 95164-0640

RECEIVED  
 JAN 30 2004  
 OFFICE OF PETITIONS

Date Mailed: 12/12/2003

## NOTICE OF ABANDONMENT UNDER 37 CFR 1.53 (f) OR (g)

The above-identified application is abandoned for failure to timely or properly reply to the Notice to File Missing Parts (Notice) mailed on 03/15/2002.

- No reply was received.

A petition to the Commissioner under 37 CFR 1.137 may be filed requesting that the application be revived.

Under 37 CFR 1.137(a), a petition requesting the application be revived on the grounds of **UNAVOIDABLE DELAY** must be filed promptly after the applicant becomes aware of the abandonment and such petition must be accompanied by: (1) an adequate showing of the cause of unavoidable delay; (2) the required reply to the above-identified Notice; (3) the petition fee set forth in 37 CFR 1.17(l); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Under 37 CFR 1.137(b), a petition requesting the application be revived on the grounds of **UNINTENTIONAL DELAY** must be filed promptly after applicant becomes aware of the abandonment and such petition must be accompanied by: (1) a statement that the entire delay was unintentional; (2) the required reply to the above-identified Notice; (3) the petition fee set forth in 37 CFR 1.17(m); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Any questions concerning petitions to revive should be directed to the "Office of Petitions" at (703) 305-9282. Petitions should be mailed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

*A copy of this notice **MUST** be returned with the reply.*

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
10/037,870	10/22/2001	Richard W. D. Booth	111022NLF.US

30233  
TROPIAN INC.  
20813 STEVENS CREEK BLVD.  
CUPERTINO, CA 95014

CONFIRMATION NO. 4801

## FORMALITIES LETTER



\*OC000000007652939\*

Date Mailed: 03/15/2002

## NOTICE TO FILE CORRECTED APPLICATION PAPERS

*Filing Date Granted*

This application has been accorded an Application Number and Filing Date. The application, however, is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a)

The required item(s) identified below must be timely submitted to avoid abandonment:

- A substitute specification in compliance with 37 CFR 1.52 because:
  - Line spacing on the specification, claims, or abstract is not 1-1/2 or double spaced (See 37 CFR 1.52(b)).
- An abstract was not provided for this application. An abstract of the technical disclosure is required under 37 CFR 1.72(b).

*A copy of this notice **MUST** be returned with the reply.*

*Arida Gorton*  
Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE



#6

Please type a plus sign (+) inside this box → **+**Approved for use through 09/30/2000. OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
valid OMB control number.**+**

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/037,870
	Filing Date	10/22/01
	First Named Inventor	BOOTH
	Group Art Unit	
	Examiner Name	
Total Number of Pages in This Submission		Attorney Docket Number 111022NLF.US

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Assignment Papers (for an Application)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input checked="" type="checkbox"/> Drawing(s)	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment / Response	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition Routing Slip (PTO/SB/69) and Accompanying Petition	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Additional Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Small Entity Statement	
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Request for Refund	
<input checked="" type="checkbox"/> Response to Missing Parts/ Incomplete Application	Remarks	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

RECEIVED  
JAN 30 2004  
OFFICE OF PETITIONS

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Michael J. Ure
Signature	<i>Michael J. Ure</i>
Date	7/10/02

CERTIFICATE OF MAILING			
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: 7/10/02			
Typed or printed name	Michael J. Ure		
Signature	<i>Michael J. Ure</i>	Date	7/10/02

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



<b>FEE TRANSMITTAL</b> <b>for FY 2001</b>  <i>Patent fees are subject to annual revision.</i>		<b>Complete if Known</b>	
		Application Number	10/037,870
TOTAL AMOUNT OF PAYMENT (\$)		Filing Date	10/22/01
		First Named Inventor	BOOTH
		Examiner Name	
		Group Art Unit	
		Attorney Docket No.	111022NLF.US

<b>METHOD OF PAYMENT</b>		<b>FEE CALCULATION (continued)</b>																																																																																																																																																																																											
1. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to: Deposit Account Number: 50-1788 Deposit Account Name: TROPIAN INC. <input checked="" type="checkbox"/> Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17 <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		<b>3. ADDITIONAL FEES</b>																																																																																																																																																																																											
2. <input type="checkbox"/> Payment Enclosed: <input type="checkbox"/> Check <input type="checkbox"/> Credit card <input type="checkbox"/> Money Order <input type="checkbox"/> Other		<table border="1"><thead><tr><th>Large Entity Code</th><th>Small Entity Code</th><th>Fee (\$)</th><th>Fee (\$)</th><th>Fee Description</th><th>Fee Paid</th></tr></thead><tbody><tr><td>105</td><td>130</td><td>205</td><td>65</td><td>Surcharge - late filing fee or oath</td><td></td></tr><tr><td>127</td><td>50</td><td>227</td><td>25</td><td>Surcharge - late provisional filing fee or cover sheet</td><td></td></tr><tr><td>139</td><td>130</td><td>139</td><td>130</td><td>Non-English specification</td><td></td></tr><tr><td>147</td><td>2,520</td><td>147</td><td>2,520</td><td>For filing a request for <i>ex parte</i> reexamination</td><td></td></tr><tr><td>112</td><td>920*</td><td>112</td><td>920*</td><td>Requesting publication of SIR prior to Examiner action</td><td></td></tr><tr><td>113</td><td>1,840*</td><td>113</td><td>1,840*</td><td>Requesting publication of SIR after Examiner action</td><td></td></tr><tr><td>115</td><td>110</td><td>215</td><td>55</td><td>Extension for reply within first month</td><td>200</td></tr><tr><td>116</td><td>390</td><td>216</td><td>195</td><td>Extension for reply within second month</td><td></td></tr><tr><td>117</td><td>890</td><td>217</td><td>445</td><td>Extension for reply within third month</td><td></td></tr><tr><td>118</td><td>1,390</td><td>218</td><td>695</td><td>Extension for reply within fourth month</td><td></td></tr><tr><td>128</td><td>1,890</td><td>228</td><td>945</td><td>Extension for reply within fifth month</td><td></td></tr><tr><td>119</td><td>310</td><td>219</td><td>155</td><td>Notice of Appeal</td><td></td></tr><tr><td>120</td><td>310</td><td>220</td><td>155</td><td>Filing a brief in support of an appeal</td><td></td></tr><tr><td>121</td><td>270</td><td>221</td><td>135</td><td>Request for oral hearing</td><td></td></tr><tr><td>138</td><td>1,510</td><td>138</td><td>1,510</td><td>Petition to institute a public use proceeding</td><td></td></tr><tr><td>140</td><td>110</td><td>240</td><td>55</td><td>Petition to revive - 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late filing fee or oath		127	50	227	25	Surcharge - late provisional filing fee or cover sheet		139	130	139	130	Non-English specification		147	2,520	147	2,520	For filing a request for <i>ex parte</i> reexamination		112	920*	112	920*	Requesting publication of SIR prior to Examiner action		113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action		115	110	215	55	Extension for reply within first month	200	116	390	216	195	Extension for reply within second month		117	890	217	445	Extension for reply within third month		118	1,390	218	695	Extension for reply within fourth month		128	1,890	228	945	Extension for reply within fifth month		119	310	219	155	Notice of Appeal		120	310	220	155	Filing a brief in support of an appeal		121	270	221	135	Request for oral hearing		138	1,510	138	1,510	Petition to institute a public use proceeding		140	110	240	55	Petition to revive - unavoidable		141	1,240	241	620	Petition to revive - unintentional		142	1,240	242	620	Utility issue fee (or reissue)		143	440	243	220	Design issue fee		144	600	244	300	Plant issue fee		122	130	122	130	Petitions to the Commissioner		123	50	123	50	Petitions related to provisional applications		126	240	126	240	Submission of Information Disclosure Stmt		581	40	581	40	Recording each patent assignment per property (times number of properties)		146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))		149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))		179	710	279	355	Request for Continued Examination (RCE)		169	900	169	900	Request for expedited examination of a design application		Other fee (specify) _____						SUBTOTAL (3) (\$)					
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<b>1. BASIC FILING FEE</b> Large Entity Small Entity Fee Fee Fee Fee Fee Description Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) 101 710 201 355 Utility filing fee 106 320 206 160 Design filing fee 107 490 207 245 Plant filing fee 108 710 208 355 Reissue filing fee 114 150 214 75 Provisional filing fee SUBTOTAL (1) (\$)		<b>2. EXTRA CLAIM FEES</b> Total Claims: _____ Independent Claims: _____ Multiple Dependent: _____ Extra Claims: -20** = _____ -3** = _____ Fee from below: _____ Fee Paid: _____ Large Entity Small Entity Fee Fee Fee Fee Fee Description Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) 103 18 203 9 Claims in excess of 20 102 80 202 40 Independent claims in excess of 3 104 270 204 135 Multiple dependent claim, if not paid 109 80 209 40 ** Reissue independent claims over original patent 110 18 210 9 ** Reissue claims in excess of 20 and over original patent SUBTOTAL (2) (\$)																																																																																																																																																																																											

<b>SUBMITTED BY</b>		<b>Complete (# applicable)</b>	
Name (Print/Type)	Michael J. Ure	Registration No. (Attorney/Agent)	33,089
Signature		Telephone	(408) 865-1300
		Date	7/10/02

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.



<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b>		<b>Docket Number (Optional)</b> 111022NLF.US
In re Application of <b>BOOTH</b>		
Application Number 10/037,870		Filed 10/22/01
For Reduction of average-to-minimum power ratio in commu		
Group Art Unit	Examiner	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a response in the above identified application.

The requested extension and appropriate non-small-entity fee are as follows (check time period desired):

<input type="checkbox"/>	One month (37 CFR 1.17(a)(1))	\$ _____
<input checked="" type="checkbox"/>	Two months (37 CFR 1.17(a)(2))	\$ 400
<input type="checkbox"/>	Three months (37 CFR 1.17(a)(3))	\$ _____
<input type="checkbox"/>	Four months (37 CFR 1.17(a)(4))	\$ _____
<input type="checkbox"/>	Five months (37 CFR 1.17 (a)(5))	\$ _____

☒ Applicant is a small entity under 37 CFR 1.9 and 1.27, therefore the fee amount shown above is reduced by one-half, and the resulting fee is: \$ 200 .  
A small entity statement under 37 CFR 1.27:

☐ is enclosed.

☐ has already been filed in this application.

☐ A check in the amount of the fee is enclosed.

☐ The Commissioner has already been authorized to charge fees in this application to a Deposit Account.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-1788 . I have enclosed a duplicate copy of this sheet.

I am the ☐ assignee of record of the entire interest.

☐ applicant.

☒ attorney or agent of record.

☐ attorney or agent under 37 CFR 1.34(a).  
Registration number if acting under 37 CFR 1.34(a). \_\_\_\_\_

7/10/02  
Date

Signature  
Michael J. Ure  
Typed or printed name

What is claimed is:

1. A method of altering a communications signal to reduce an average-to-minimum power ratio thereof, the communications signal being formed using pulse-shaping techniques applied to instances of a pulse of a given form, the method comprising, for at least one signal component:
  - setting a desired signal minimum;
  - identifying a time instant in the vicinity of which the signal is likely to fall below the desired signal minimum;
  - using a mathematical model of the communications signal in a time interval said time instant, determining a minimum of the communications signal during said time interval;
  - determining a measure of at least one of magnitude and phase of the communications signal corresponding to the minimum of the communications signal during said time interval; and
  - if said minimum of the communications signal is less than a desired signal minimum:
    - in accordance with said one of magnitude and phase, forming a scaled corrective pulse; and
    - adding to the signal component the scaled corrective pulse, in timed relation to the signal, to form a modified communications signal having a reduced average-to-minimum power ratio.
2. The method of Claim 1, comprising repeating said identifying, determining, forming and adding steps to form from the modified communications signal a further modified communications signal.
3. The method of Claim 1, comprising determining a measure of both magnitude and phase of the communications signal at said approximate time instant.
4. The method of Claim 3, comprising:
  - calculating values of the communication signal at a small number of points near said approximate time instant; and



fitting a mathematical function to the values.

5. The method of Claim 4, wherein the communications signal is represented within a signal plane having an origin denoting a signal of zero magnitude, and determining a measure of magnitude comprises determining within the signal plane a point of intersection between said function and an intersecting line that bears a predetermined relationship to the function and that includes the origin.
6. The method of Claim 5, wherein the small number of points is two, and the mathematical function is a spanning line that spans a distance between the two points..
7. The method of Claim 6, comprising determining a value representing a straight-line distance between said points.
8. The method of Claim 7, wherein the value representing the straight- line distance value is computed using a function.
9. The method of Claim 7, wherein the value 1 is used to represent the straight- line distance value.
10. The method of Claim 7, wherein the measure of the phase of the communications signal at the approximate time instant is represented by a trigonometric function of the phase.
11. The method of Claim 10, wherein the trigonometric function is computed using said straight-line distance value.
12. The method of Claim 11, wherein the trigonometric function is approximated by:
  - performing multiple comparison operations; and
  - based on results of the comparison operations, selecting one of multiple pre-stored values.

13. The method of Claim 12, comprising deriving from said points a line segment lying within a first quadrant of the signal plane, wherein the comparison operations compare a slope of the line segment with multiple predetermined slopes.
14. The method of Claim 12, comprising deriving from said points a line segment lying within a first quadrant of the signal plane, wherein the comparison operations comprise applying successive rotations to the line segment and, after each rotation, applying a binary criterion to a location of the line segment in the complex plane.
15. A method of altering a communications signal to reduce a average- to- minimum power ratio thereof, the communications signal being represented in polar form having a magnitude component and a phase-related component, the method comprising, for at least one signal component:
- setting a desired signal minimum;
  - identifying a time instant at which the signal falls below the desired signal minimum; and
  - adding to the signal component a corrective pulse, in timed relation to the signal, to formed a modified communications signal having a reduced average-to- minimum power ratio.
16. The method of Claim 15, wherein phase is the phase-related component, comprising, during a time interval in which the phase of the communications signal changes from a first value to a second value, interpolating between actual phase values and a line extending between the first value and the second value.
17. The method of Claim 15, wherein the signal component is phase-related, comprising:
- adding to the signal component two corrective pulses that together have a negligible effect on the signal component outside a limited period of time.

18. A method of altering a communications signal to reduce a average- to- minimum power ratio thereof, comprising:

performing conditioning of the communications signal in a first domain to form a modified communications signal; and

performing conditioning of the modified communications signal in a second domain to form a further modified communications signal;

wherein the first domain is one of a quadrature domain and a polar domain, and the second domain is a different one of the quadrature domain and the polar domain.

19. The method of Claim 6, wherein the intersecting line is orthogonal to the spanning line.

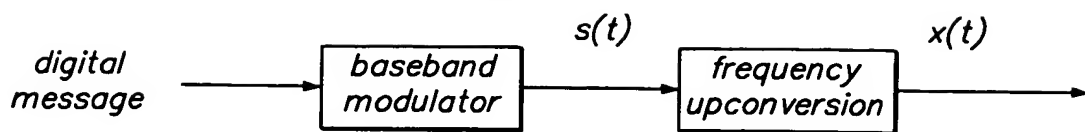
20. The method of Claim 6, wherein the communications signal is formed in accordance with a signal constellation in which at least two signal points are located at different distances from the origin in the complex plane, and wherein identifying a time instant in the vicinity of which the signal is likely to fall below the desired signal minimum comprises:

dividing a straight-line distance along a transition line between two constellation points into two ratioed portions based on a point of intersection of the transition line with a normal passing through the origin.

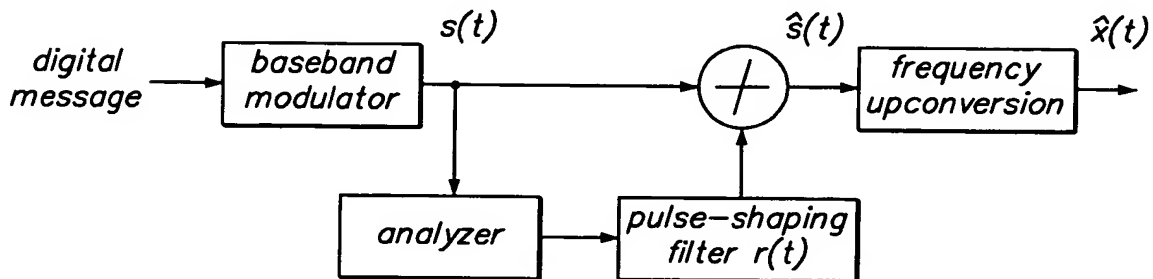
## ABSTRACT OF THE DISCLOSURE

This invention, generally speaking, modifies pulse amplitude modulated signals to reduce the ratio of average power to minimum power. The signal is modified in such a manner that the signal quality remains acceptable. The signal quality is described in terms of the Power Spectral Density (PSD) and the Error Vector Magnitude (EVM).

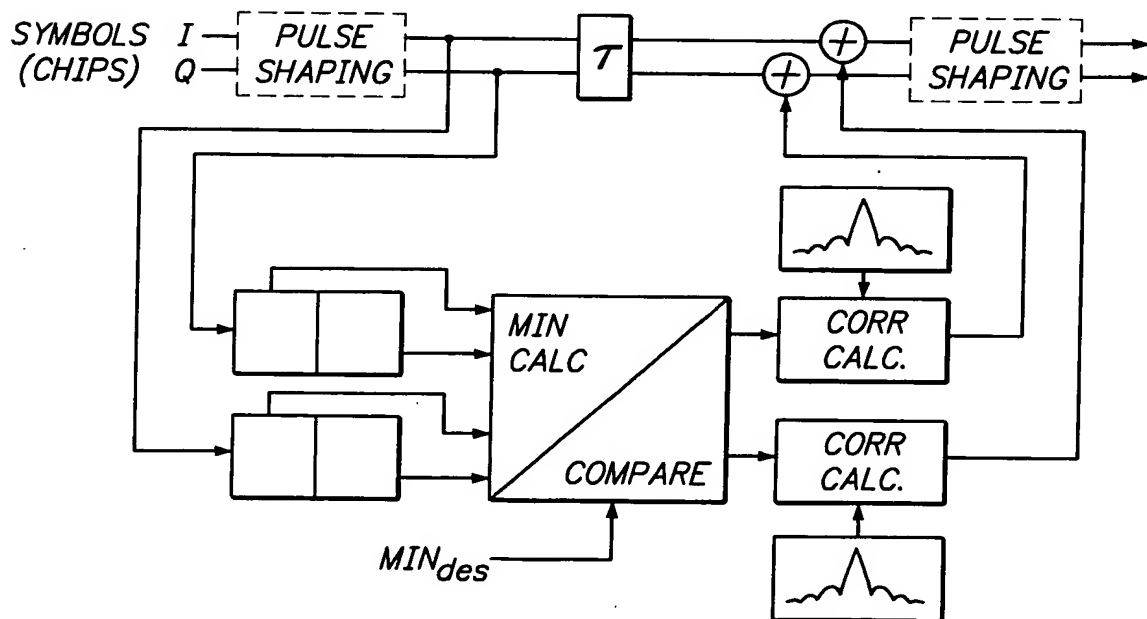
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**FIG. 1**



**FIG. 2A**



**FIG. 2B**